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STUBBLE MULCHING

IN THE GREAT PLAINS

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ATLANTA BRANCH

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U. S. DEPARTMENT OF AGRICULTURE
Soil Conservation Service

TUBBLE MULCHING I

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le mulching is a year-round way of managing residues on cropland. Harvesting, seedbed preparation, planting, and cultivating are all done so leave residues of the previous crop on top of the until after the next crop is seeded. These residues—stubble—of the last crop make a mulch that conserve soil and water. Hence the name, stubble mulching.

le mulching greatly reduces both wind and erosion. It is particularly useful in the Great where ways to control wind erosion are a con- g need and where high-producing stubble crops is small grain and sorghum are common.

n the surface, the plant residues keep the wind getting at the soil and the rain from compacting ith residues on the surface, there is less runoff be- the soil takes in water more rapidly. There is less soil washing because the mulch slows down eed of the water that does run off. And as the es turn to humus they improve the soil.

AS LITTLE TILLAGE AS POSSIBLE

ewer the better, so long as you control the is the rule for the number of tillage operations. rch in several experiment stations in the Great shows that you destroy about half of whatever

residues are left each time you use a disk-type imple- ment. Sweeps or blades destroy only about one-tenth of the residue each time over the field.

WIDE SWEEPS BEST

The wider the better, but not less than 30 inches, is a good rule for the width of your sweeps. All blade- type machines are wider than this. Remember that sweeps or blades destroy only about 10 percent of the stubble each time over the field as compared to about 50 percent for disk-type machines.

SWEEP-TYPE IMPLEMENTS BEST

Sweep-type implements destroy less residue because they disturb the surface of the soil less. The sweeps loosen the soil thereby killing weeds. The small amount of soil stirring that occurs is caused mostly by the shanks or standards.

TILLAGE SHOULD BE SHALLOW

To control weeds and conserve moisture, you should run your sweeps or blades 3 or 4 inches deep most of the time. But you need to cultivate deeper than this, 5 or 6 inches, at least once during the year to help prevent the formation of a tillage pan. Research shows that, in general, the first tillage should be the deepest.

mulch covers of wheat and sorghum stubble. Neither field will blow if the rest of the stubble-mulching operations are done so as to keep as much stubble as possible.

OKLA - 11,182

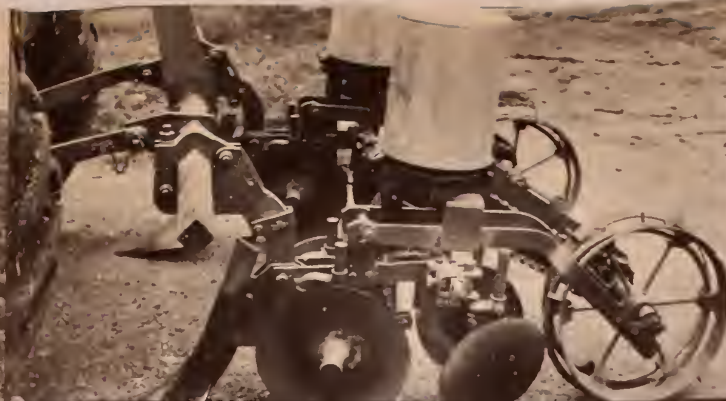
TEX - 49,649





NEBR-1870

Wheat growing in a stubble mulch that will provide soil protection until the wheat is well started.



NEBR-1872

Disk-type lister with 13-inch disks that opens narrow furrows for planting and leaves the residue between rows to protect the soil against runoff and erosion.



NEBR-1888

Hoe-type deep-furrow drills seeding wheat in stubble.

STUBBLE MULCHING MOST COMMON FOR SMALL-GRAIN CROPS

Stubble mulching starts at harvest time. Small grains—the crops most commonly stubble mulched—should be harvested so as to leave as much stubble as possible. To get an even distribution of the straw over the soil surface, use a straw spreader on your combine.

ROW CROPS ALSO CAN BE STUBBLE MULCHED

Corn, grain sorghum, and other row crops can be stubble mulched. Here is an example of grain sorghum following wheat.

Leave the wheat stubble standing over winter. If necessary, use a sweep-type cultivator to check weed

growth in the fall. If volunteer grain is a problem the next spring, repeat the sweep cultivation.

Plant the sorghum with a narrow moldboard lister or rotary moldboard lister with 13-inch disks. These machines make a narrow furrow, 8 to 10 inches wide, and do not throw up much of a ridge.

Cultivate the first time over with an implement that will not destroy the ridges. You can use a skew treader or a standard cultivator. But if you use a standard cultivator, equip it with shields and large single sweeps 16 to 18 inches wide instead of with ordinary shovels. These will protect the growing crop, avoid clogging, and prevent burying the residue. Then cultivate the sorghum with sweep-type cultivators equipped with disk hillers.

Following the grain sorghum harvest, leave the stalks standing over winter.

In preparing the seedbed the next spring, use an implement that will cut or shred the stalks so as not to interfere with seeding the next crop and still keep enough residue on the surface for soil protection.

Where holding snow is not important, cut or shred the stalks in the fall and anchor them in the soil with a disk to prevent the loss of residues by wind. This will help keep leaves from blowing away.

SEEDING IN STUBBLE MULCH NOT DIFFICULT

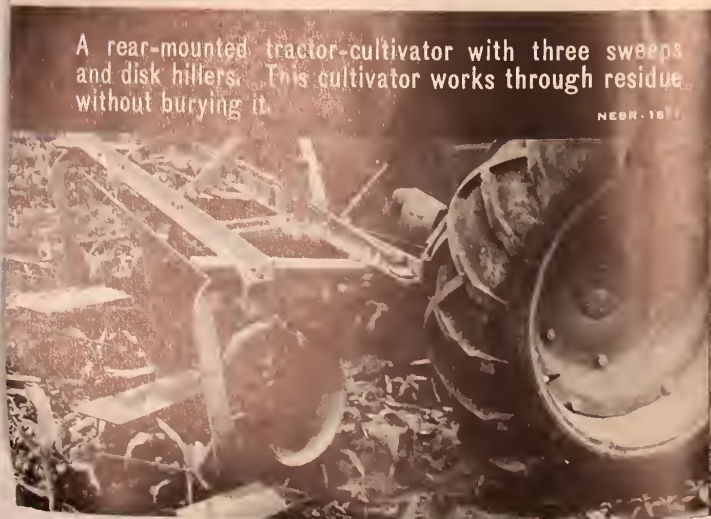
You need a clean furrow, cut down to moisture, in which to drop the seed and at the same time leave ample stubble on the surface to prevent erosion.

Drills of the deep-furrow shoe or hoe type are effective for working through heavy residues. Semideep- or deep-furrow disk-type drills will also handle large amounts of stubble.

All drills should be equipped with press wheels to pack the soil firmly around the seed.

WASHINGTON, D. C.

Issued January 1959



NEBR-1871

A rear-mounted tractor-cultivator with three sweeps and disk hillers. This cultivator works through residue without burying it.



TEX-48,848

Sorghum residue properly shredded and tucked into the soil so as to protect it from the wind.



NEBR - 1870

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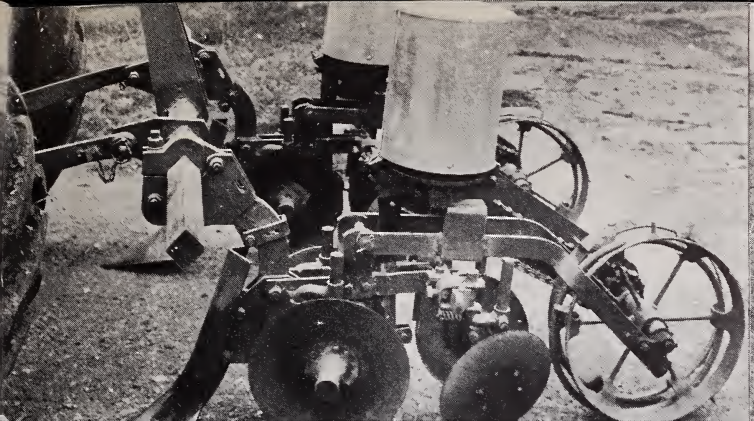
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NEBR - 1871





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TEX-49.648





NEBR - 1869

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